

U.S. Patent Application No. 09/630,121
Amendment dated July 26, 2006
Reply to Final Office Action dated July 26, 2005

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-6 (Canceled)

Claim 7 (Previously presented): The plank of claim 31, wherein said core is a rigid thermoplastic material.

Claims 8-9 (Canceled)

Claim 10 (Previously presented): The plank of claim 31, wherein said at least one thermoplastic material is polyvinyl chloride.

Claim 11 (Previously presented): The plank of claim 31, wherein said at least one thermoplastic material is a rigid polyvinyl chloride.

Claim 12 (Currently amended): The plank of claim 31, wherein said core has a thickness of from about 5 mm to about 20 mm, a width of from about 2 cm to about 30 cm, and a length of from about 30 cm to about 130 cm.

Claims 13-14 (Canceled)

Claim 15 (Currently amended): The plank of claim 14 31, wherein said series of cavities are rounded, triangular, or rectangular in cross-section.

Claim 16 (Currently amended): The plank of claim 14 31, wherein each of said series of cavities includes a dimension of about 0.3 inch by about 0.3 inch and is separated by said thermoplastic material having a thickness of from about 0.05 inch to about 0.07 inch.

Claim 17 (Canceled)

U.S. Patent Application No. 09/630,121
Amendment dated July 26, 2006
Reply to Final Office Action dated July 26, 2005

Claim 18 (Currently amended): The plank of claim 17 31, wherein said core has a groove located on two sides of said core, wherein said sides are opposite to each other.

Claim 19 (Currently amended): The plank of claim 17 31, wherein said grooves have teeth located on the upper surface, lower surface, or both upper and lower surfaces of said grooves.

Claim 20 (Previously presented): The plank of claim 31, wherein two sides of said core are tapered or have beveled edges, wherein said sides are opposite to each other.

Claim 21 (Previously presented): The plank of claim 31, wherein said bottom surface of said core has at least two bottom feet or a series of co-extruded polymeric strips to raise said core from a sub-floor or substrate surface.

Claims 22-30 (Canceled)

Claim 31 (Currently amended): A thermoplastic plank comprising:

a core comprising at least one thermoplastic material wherein said core has a top surface, a bottom surface, and opposing sides;

a digital printed design on said top surface of the plank;

at least one protective coating on top of said digital printed design,

wherein said thermoplastic material comprises at least one thermoplastic resin, at least one processing aid, at least one impact modifier, at least one lubricant, at least one stabilizer, and at least one plasticizer, wherein said plasticizer is present in an amount of less than about 20% by weight of said core;

said core has a thickness of from about 5 mm to about 20 mm and a width of from about 2 cm to about 30 cm;

U.S. Patent Application No. 09/630,121
Amendment dated July 26, 2006
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said core has a series of paralleled cavities which are separated by said thermoplastic material;

said core has at least one groove located on a side of said core; and

wherein said core has a surface tension of at least 34 dynes/cm.

Claim 32 (Original): The thermoplastic plank of claim 31, wherein said protective coating comprises a polyurethane type coating with or without wear resistant particles in the coating.

Claim 33 (Original): The thermoplastic plank of claim 31, wherein said thermoplastic material comprises polyvinyl chloride type polymers.

Claims 34-37 (Canceled)

Claim 38 (Currently amended): The thermoplastic laminate of claim ~~37~~ 31, wherein said thermoplastic material further comprises at least one pigment.

Claim 39 (Previously presented): The thermoplastic plank of claim 31, said plank having a substantially planar top surface, opposing sides, opposing ends, and a bottom surface, wherein said bottom surface has a plurality of channels formed therein, each of said channels extending longitudinally from one end of the plank to the other end of the plank.

Claim 40 (Original): The thermoplastic flooring plank of claim 39, wherein said channels are substantially U-shaped.

Claim 41 (Canceled)

Claim 42 (Original): A flooring system comprising a plurality of the thermoplastic flooring planks of claim 39 connected together.

Claim 43 (Previously presented): The thermoplastic plank of claim 31, said plank having substantially planar top and bottom surfaces, opposing ends, and a series of elongate cavities

U.S. Patent Application No. 09/630,121
Amendment dated July 26, 2006
Reply to Final Office Action dated July 26, 2005

between said top and bottom surfaces, each of said cavities extending from one of said opposing ends of said plank to another of said opposing ends of said plank.

Claim 44 (Original): A flooring system comprising a plurality of the thermoplastic flooring planks of claim 43 connected together.

Claim 45 (Previously presented): A surface covering comprising a plurality of thermoplastic planks of claim 31 joined together.

Claim 46 (Previously presented): The surface covering of claim 45, wherein said surface covering is a floor covering that is a floating floor installation.

Claim 47 (Currently amended): A floor covering comprising a plurality of thermoplastic planks, wherein said floor covering is a floating surface and wherein said thermoplastic plank comprises:

a core comprising at least one thermoplastic material, wherein each core has a top surface and a bottom surface, and opposing sides;

a digital printed design on said top surface of said core, wherein said digital printed design has a top surface and a bottom surface; and

a protective layer affixed to said top surface of said digital printed design,

wherein said thermoplastic material comprises at least one thermoplastic resin, at least one processing aid, at least one impact modifier, at least one lubricant, at least one stabilizer, and at least one plasticizer, wherein said plasticizer is present in an amount of less than about 20% by weight of said core;

said core has a thickness of from about 5 mm to about 20 mm and a width of from about 2 cm to about 30 cm;

U.S. Patent Application No. 09/630,121
Amendment dated July 26, 2006
Reply to Final Office Action dated July 26, 2005

said core has a series of paralleled cavities which are separated by said thermoplastic material;

said core has at least one groove located on a side of said core; and

wherein said core has a surface tension of at least 34 dynes/cm.

Claim 48 (Previously presented): The floor covering of claim 47, wherein at least a portion of said thermoplastic laminate planks are joined together by splines.

Claim 49 (Previously presented): The floor covering of claim 47, wherein at least a portion of said thermoplastic laminate planks are joined together by a bonding agent.

Claim 50 (Previously presented): The floor covering of claim 49, wherein said bonding agent is tetrahydrofuran, methylene chloride, a ketone, or combinations thereof.

Claim 51 (Currently amended): A thermoplastic plank comprising:

a core comprising at least one thermoplastic material, wherein said core has a top surface and a bottom surface, and opposing sides;

a digital printed design on said top surface of said core, wherein said digital printed design has a top surface and a bottom surface; and

at least one protective layer affixed to said top surface of said digital printed design, with the proviso that no backing layer is located adjacent the bottom surface of said core,

wherein said thermoplastic material comprises at least one thermoplastic resin, at least one processing aid, at least one impact modifier, at least one lubricant, at least one stabilizer, and at least one plasticizer, wherein said plasticizer is present in an amount of less than about 20% by weight of said core;

U.S. Patent Application No. 09/630,121
Amendment dated July 26, 2006
Reply to Final Office Action dated July 26, 2005

said core has a thickness of from about 5 mm to about 20 mm and a width of from about 2 cm to about 30 cm;

said core has a series of paralleled cavities which are separated by said thermoplastic material;

said core has at least one groove located on a side of said core; and

wherein said core has a surface tension of at least 34 dynes/cm.

Claim 52 (Previously presented): The thermoplastic plank of claim 51, wherein each core has a series of parallel cavities which are separated by said thermoplastic material, wherein the thickness of the thermoplastic material separating the outermost cavities is thicker than the thickness of the thermoplastic material separating the innermost cavities.

Claim 53 (Currently amended): A thermoplastic plank comprising:

a core comprising at least one thermoplastic material, wherein said core has a top surface and a bottom surface, and opposing sides;

a digital printed design on said top surface of said core, wherein said digital printed design has a top surface and a bottom surface; and

a protective layer affixed to said top surface of said digital printed design, wherein said at least bottom surface of the core is thermally treated,

wherein said thermoplastic material comprises at least one thermoplastic resin, at least one processing aid, at least one impact modifier, at least one lubricant, at least one stabilizer, and at least one plasticizer, wherein said plasticizer is present in an amount of less than about 20% by weight of said core;

U.S. Patent Application No. 09/630,121
Amendment dated July 26, 2006
Reply to Final Office Action dated July 26, 2005

said core has a thickness of from about 5 mm to about 20 mm and a width of from about 2 cm to about 30 cm;

said core has a series of paralleled cavities which are separated by said thermoplastic material;

said core has at least one groove located on a side of said core; and

wherein said core has a surface tension of at least 34 dynes/cm.

Claim 54 (Previously presented): The thermoplastic plank of claim 31, wherein no filler is present in said core.

Claim 55 (New): The thermoplastic plank of claim 31, wherein said core has a surface tension of at least 45 dynes/cm.

Claim 56 (New): The thermoplastic plank of claim 31, wherein said core has a surface tension of 34 dynes/cm to 45 dynes/cm.

Claim 57 (New): The thermoplastic plank of claim 51, wherein said core has a surface tension of at least 45 dynes/cm.

Claim 58 (New): The thermoplastic plank of claim 51, wherein said core has a surface tension of 34 dynes/cm to 45 dynes/cm.

Claim 59 (New): The thermoplastic plank of claim 53, wherein said core has a surface tension of at least 45 dynes/cm.

Claim 60 (New): The thermoplastic plank of claim 53, wherein said core has a surface tension of 34 dynes/cm to 45 dynes/cm.